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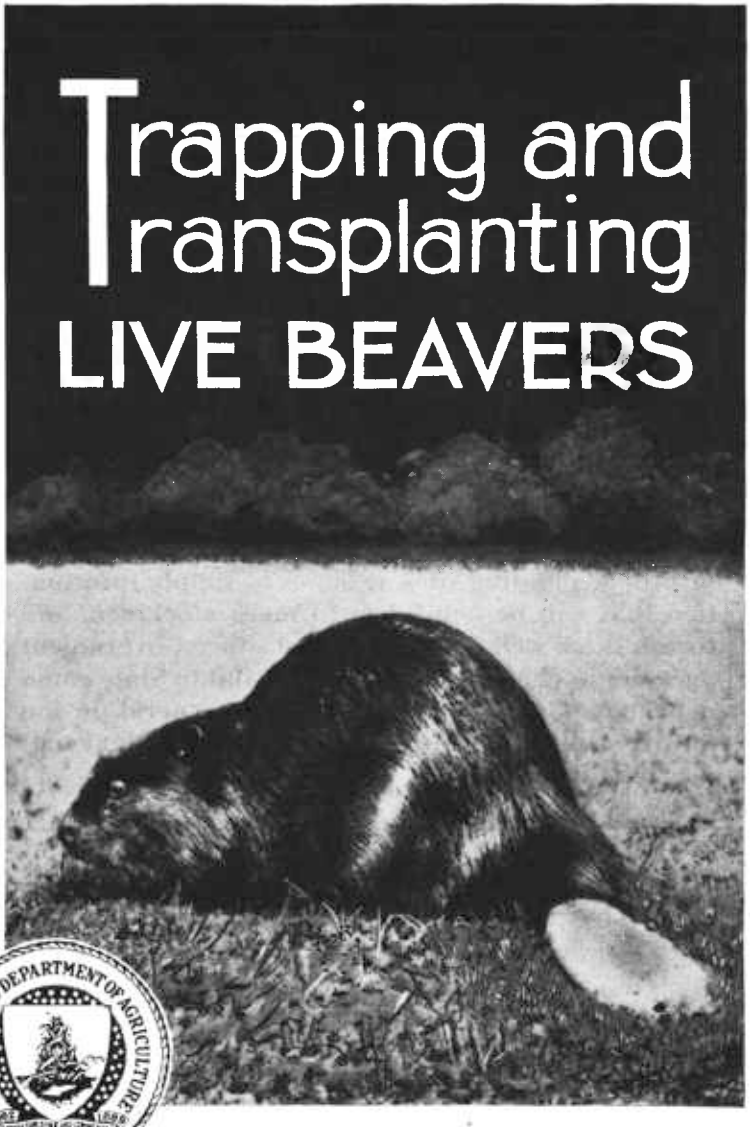
Trapping and Transplanting LIVE BEAVERS



WHEREVER BEAVERS cause damage, as in farming communities or in irrigation or diking districts, and wherever they have become so overabundant in suitable localities as to cause wholesale migration to less desirable areas, there is need for control. Offending colonies and surplus animals should be removed to carefully selected sites where their dam-building activities may aid in the cause of conservation.

For many years the Bureau of Biological Survey has aided other agencies in transplanting beavers. In this bulletin, which gives detailed descriptions of live-beaver traps and discusses trapping operations, holding pens, means and methods of transporting and transplanting trapped beavers, and the selection of proper planting sites, it hopes to supply information that will be helpful to farmers, stockmen, and foresters, as well as to officials of other Government agencies in charge of public lands and to State game departments and conservationists in general, in the proper utilization and control of that master engineer, the beaver.

Washington, D. C. Issued March 1937

TRAPPING AND TRANSPLANTING LIVE BEAVERS

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BEAVERS have long been viewed by the people of the United States as a valuable fur resource, one that played a prominent part in the early economic development of the West. Whether these fur bearers would withstand such a terrific drain in numbers as resulted from the early years of intensive trapping was then probably a matter of small concern to the fur traders. Thanks to rigid protective laws, however, beavers are today again well established in more than half the States. They have become an important factor in soil and water conservation and are building up into a major national fur resource.

In the period from early pioneer days to the present time, the landscape has changed materially—farms now cover rich bottom lands, forests have been cut over, and forage resources have been impaired by unwise land uses. The return of beavers has brought complications in connection with farming operations that necessitate the removal of colonies from localities where they are harmful to places where they may prove of value.

Mountain tributary streams in National and State forests and in game refuges and other streams far enough away from roads, trails, and cultivated fields to prevent damage offer suitable locations for beavers, whose dam-building activities are a powerful force in flood control and conservation of water resources. The threat to western irrigation reservoirs of the precipitation of sediment from eroded soils is partially alleviated by the formation of thousands of settling basins by this rodent, one of nature's master engineers. The conservation of beavers deserves consideration for economic as well as sentimental reasons.

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BEAVERS IN RELATION TO SOIL AND WATER CONSERVATION

Millions of dollars are being spent annually to conserve water resources for irrigation, power, and domestic purposes. Large sums are also being expended for flood control at low elevations by the construction of dikes, dams, and drainage canals. Federal and State agencies are reforesting on a large scale for watershed protection. Here beavers can play a prominent part in the proper management of soil and water. Colonies introduced on mountain tributary streams that drain from large watersheds cannot help but have a beneficial effect upon these undertakings.

Observations over many years show that beavers are responsible for building up valuable bottom lands by checking—through pond construction—rapidly flowing flood waters that are filled with soil, thus permitting sedimentary deposits. Meadows are flooded and subirrigated and the quantity of forage during dry months is thus

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FIGURE 1.—Beaver dam 4 feet high and 500 feet long. Routt National Forest, Colo. (Photograph by Forest Service.)

increased for both game and livestock. Fish life is given added protection through a more uniform stream flow throughout the year. In Grays Harbor County, Wash., the west fork of the Satsop River becomes roily and rises and falls rapidly after every heavy rainfall. The east fork, which flows through several miles of beaver dams, has carried sediment in one year only since under observation and even in storm periods shows no tendency to flood. Similar observations in other States could be cited. Beaver dams form natural trout-rearing ponds and furnish breeding and nesting sites for waterfowl and an improved habitat for muskrats, minks, and other fur bearers. On a tributary of the Pilchuck River in Skagit County, Wash., recent observations showed that in less than 1 mile there were 19 beaver dams constructed and maintained by more than 100 beavers. The last dam downstream was 8 feet high and 80 feet long, with a water area covering about 5 acres. A typical beaver dam is illustrated in figure 1.

LOSSES TO AGRICULTURE CAUSED BY BEAVERS

In many farming communities beavers are not wanted. When streams flow through farm lands they provide the animals with homes so located as to enable them readily to damage corn, grain, and vegetable crops. Hay meadows are flooded, orchards are damaged (fig. 2), wood lots suffer, and considerable rich soil is carried away when floods result from streams being diverted by beaver dams or extensive bank burrowing. Irrigation and diking districts also are damaged by extensive bank burrowing.

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FIGURE 2.—Apple tree 6 inches in diameter cut down by beavers.

The necessity for controlling beavers in such situations is apparent. Rather than pelt them, the logical procedure, considering their value in watershed, soil, and water conservation, is to transfer the offending colonies to suitable mountain streams.

PLANNING A BEAVER-STOCKING PROGRAM

Large areas now in national forests, national parks, State forests, soil-conservation projects, reclamation projects, game refuges, city watersheds, and suitable submarginal farm lands can be stocked with beavers, in line with other protection programs. In such areas surveys of mountain streams should be made and the food supply and possibilities of utilizing the animals noted. In this undertaking it is essential that such agencies as the Forest and Soil Conservation Services, the Bureau of Biological Survey, and the State fish and game commissions and others directly concerned with soil and water conservation and control actively get together in planning extensive district or State-wide stocking programs. Beavers for stocking purposes must be taken uninjured. Live trapping is a seasonal operation and generally should take place from July to

October, a period of low water, when the young are weaned and old enough to shift for themselves. It should always be practiced in accordance with State laws.

TRAPPING EQUIPMENT

Special beaver traps can be purchased commercially or can be constructed in any well-equipped machine shop. Essential equipment for the trapper, in addition to traps, includes wading boots, beaver castor scent, carpenters' clamps, gunny sacks, pliers, hammers, and other tools necessary for making repairs in the field. A light pick-up truck will enable the trapper to approach more closely the scene of operations. Collapsible holding pens and tubs for water should be available at the headquarters camp. A flat-bottomed boat is essential in large streams and lakes.

PURSE TYPES OF LIVE-BEAVER TRAPS

There are several types of live-beaver traps on the market, costing from $10 to $50 each, depending upon the patented idea and the metals used in the construction. Two efficient traps have been developed by the Biological Survey, the Bailey trap and the trap worked out by Scheffer and Couch in the West.

Padded steel traps are not recommended, since they are likely to cripple the animals. Beavers for stocking purposes must be taken uninjured.

Bailey Trap

The Bailey trap, as described in United States Department of Agriculture Technical Bulletin 21, Beaver Habits and Experiments in Beaver Culture,[1] is shown in figures 3 and 5. It has since been modified by various manufacturers by reduction in size and change in material. New types of aluminum-alloy metals, while expensive, have proved superior, because of their lightness and nonrust features. Flexible netting has been used to prevent binding. The Bailey trap is efficient, and since the patent has been dedicated to the public the trap may be manufactured in any machine shop.

Scheffer-Couch Trap

The Scheffer-Couch trap is similar to the double-spring steel bear trap but is large enough to enclose the animal in a flexible netting. The patent on this trap also has been dedicated to public use by Scheffer and Couch so that it can be manufactured without patent infringement. Since the patent was issued there have been some modifications—such as using aluminum-alloy metals for construction, building the trap narrower, and lengthening the trap to permit the use of a center trigger pan—all of which are shown in figure 4.

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[1] Can be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., at 20 cents a copy.

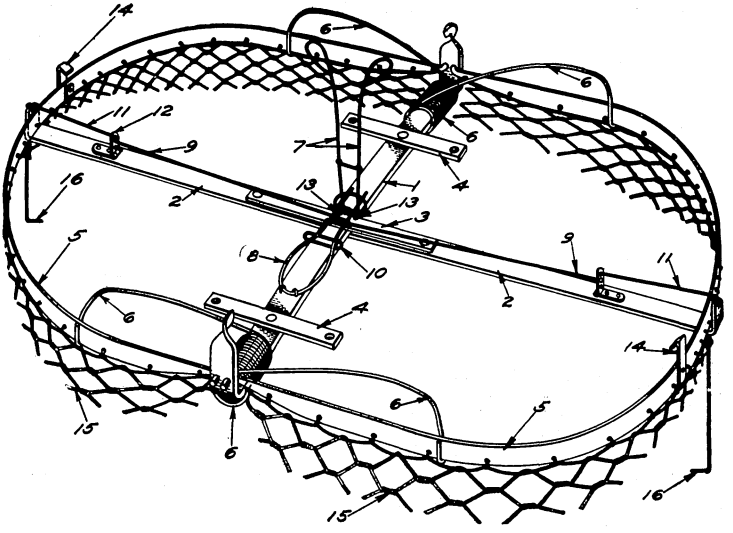

FIGURE 3.—Details of construction of the Bailey beaver trap.

1. Base bar.
2. Crossbar.
3. Top crossbar.
4. Short crossbar.
5. Trap jaw.
6. Coil spring.
7. Trigger.
8. Trigger spring.
9. Trigger wire.
10. Trigger collar.
11. Trigger bar.
12. Hinged trigger-loop.
13. Trigger grip.
14. Clasping hook.
15. Wire mesh.
16. Safety hook.

MATERIAL REQUIRED FOR BAILEY TRAP

(Italic figures in parentheses refer to the numbers of the parts in fig. 3)

1 cold-rolled steel bar 1¼ by ¼ by 50 inches, for base bar (*1*).
2 cold-rolled steel bars each ⅞ by 3/16 by 81½ inches, for trap jaws (*5*).
1 piece of flat iron 1¼ by ¼ by 54 inches, for crossbar (*2*).
1 piece of flat iron 1 by ¼ by 13 inches, for top crossbar (*3*).
2 pieces of flat iron each 1 by ¼ by 11 inches, for short crossbars (*4*).
2 pieces of strap brass each ¾ by 1/16 by 6 inches, for clasping hooks (*14*).
2 pieces of no. 3[2] (¼-inch) oil-tempered spring-steel wire, each 8 feet long, for making the two coil springs (*6*).
1 piece of no. 6[2] oil-tempered spring-steel wire, 2 feet long, for trigger spring (*8*).
2 pieces of no. 6 oil-tempered spring-steel wire, each 10 inches long, for trigger bars (*11*).
1 piece of 1-inch mesh, no. 16[2] woven wire, galvanized before weaving, 48 inches long, from a roll 60 inches wide, for bottom and sides of trap (*15*).
50 feet of no. 15[2] galvanized malleable wire, for lacing and linking wire-mesh sides and floor of trap to jaws and bottom, for making trigger wires (*9*), trigger collar (*10*), and safety hooks (*16*), and for fastening trigger spring.
32 inches of no. 12 galvanized wire, for trigger (*7*).
5 quarter-inch bolts, four of them ¾ inch long and one, 1 inch long, for attaching crossbars to base bar.
1 pair of 1½-inch brass hinges with strap-shaped sides, and two screw holes in each, for trigger loop (*12*).

[2] All wire sizes are standard American gage.

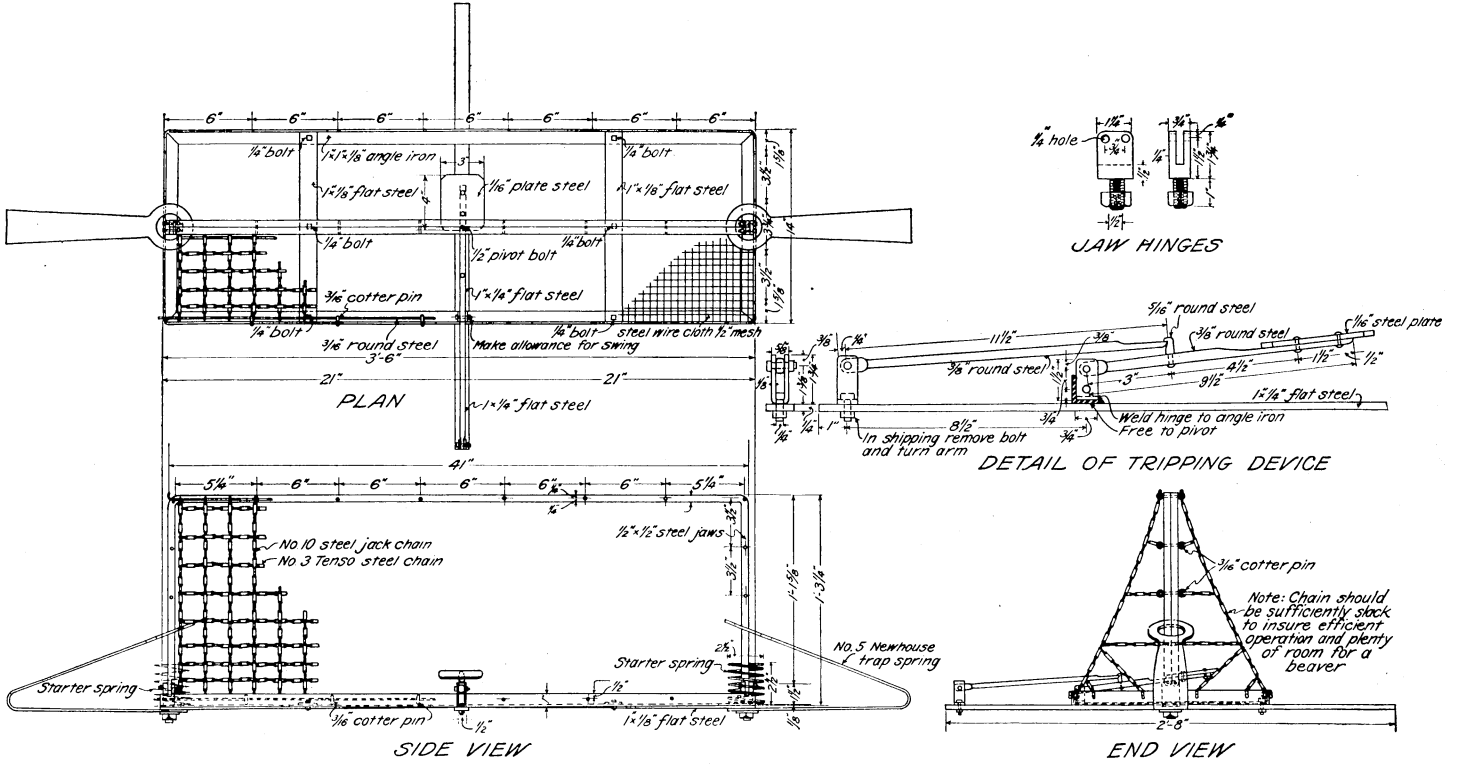

FIGURE 4.—Details of construction of the Scheffer-Couch beaver trap.

MATERIAL REQUIRED FOR 10 SCHEFFER-COUCH BEAVER TRAPS

17½ feet no. 3 mesh, 0.063 (36-inch width) Tyler wire cloth center to center. Cut two pieces 41½ by 13½ inches from every 41½-inch length.
20 Newhouse no. 5 standard trap springs.
20 8-gage, 2½ inches diameter by 2½ inches long, 6 coils straight valve springs.
20 ½- by ½-inch by 5-foot 9-inch steel jaws punched with ¼-inch holes as detailed and bent to form as shown on drawing. Also joined by 20 jaw hinges with 1 nut each as shown at *B*. Jaws must work freely about jaw hinges which are included.
10 pieces 1- by ⅛-inch by 9-foot 4-inch angle iron bent and welded in place as detailed on frame punched with three 9/16-inch holes and four 5/16-inch holes, as detailed.
20 pieces 1- by ⅛- by 13¾-inch flat steel punched with three 5/16-inch holes, as detailed.
10 pieces 1- by ⅛- by 42-inch flat steel punched with two 5/16-inch and two 9/16-inch holes for bottom at center.
20 3/16-inch diameter by 43-inch steel rods for bottom.
20 3/16-inch diameter by 42-inch steel rods for top, to be made up at mill.
10 pieces chain net complete for both sides and ends for trap as detailed on drawing, including:
680 feet no. 10 steel jack chain [3] cut into 440 lengths of 1 foot 6½ inches.
614 feet no. 3 Tenso steel chain [3] cut in convenient sizes as follows:
160 lengths 42 inches long.
80 lengths 1½ inches long.
40 lengths 3 inches long.
80 lengths 5 inches long.
10 tripping devices as shown at A (adjustment to be made to suit).
4½ pounds 3/16- by 1-inch cotter pins.
60 ¼-inch diameter by ¾-inch roundhead stove bolts with 1 nut and washer each.
10 ½-inch diameter by 1-inch roundhead stove bolts with 1 nut and washer each.

TRAPPING OPERATIONS

Where a colony is to be trapped, the situation should be carefully inspected for dams, beaver houses, bank burrows, canals, and forage areas. This is important, as each trap must be so placed as to obtain the quickest possible results. Before setting the traps any necessary repairs should be made and all parts should work with precision. Water sets are preferred to land sets, since the disturbance on land may cause beavers to become shy and to avoid certain suspicious spots. An experienced trapper should handle 6 to 12 traps efficiently. Where possible, two men should work together, facilitating the setting of traps and the transportation and care of captive beavers.

Traps should receive conscientious care, so that they may be maintained in good working order. At the close of operations, they should be sprayed with a dull-black waterproof paint and all the movable parts should be greased to prevent rusting. Such precautions will prolong the usefulness of the traps for many years.

SMALL STREAMS

Slide sets are usually not necessary in small streams. It is preferable to set traps in the channels and canals. Channel sets are desirable for quick action and should generally be placed far enough from occupied beaver dens to insure a minimum of disturbance. Used channels and canals can be determined by the active trails on

[3] Chain one or two sizes lighter may be used.

shore. The trap should be placed in shallow water, so that the trigger pan is not more than 4 to 6 inches under the surface. Where muskrats are present a slightly deeper setting may be necessary to allow the smaller rodent to clear the trigger. When sprung, the trap must show at least 6 inches above water, to allow air for breathing. The use of wading boots and the preparation of the set in the water will cause little disturbance in the colony.

Where canals are wide, the beavers may be guided over the trap by using rows of weathered limbs or aspen stakes set at close intervals from shore to the trap. If the water in the channel is quiet, small logs showing several inches of surface above the water may be anchored to force the swimming animal over the trap. This method can be used to close certain side channels.

FIGURE 5.—The Bailey trap in action. (Photograph by the Forest Service.)

A base for the trap may be built up on a mud bottom. Care should be taken that the rocks or sticks used do not interfere with the action of the trap. If there is danger of the trap sliding into deep water, stakes may be driven at the four corners, but they should be concealed beneath the surface of the water.

Dam sets are resorted to only where a colony is greatly depleted. Breaks made in the dam will change the water level and interfere with the more favorable channel sets. When the time is limited, however, and there is little foraging activity, small breaks made several hours before the traps are set will often attract the most wary beaver, although there is a possibility that the captive beaver will be drowned if repairs to the break by other beavers raise the water level above the trap.

LARGE STREAMS, SLOUGHS, AND LAKES

As a rule there is an absence of beaver dams in large rivers and sloughs, which present a more difficult problem in live trapping, because of the deep-water situation (fig. 6).

SLIDE SETS

Perhaps the best place to set the trap on a beaver slide is where the forage trail leaves the water. An artificial platform for the trap base, properly secured with stakes, will often permit placing the set in several feet of water. A slide that is vertical to the water should be avoided, as the beaver coming down may overshoot the trap and be pinched in its jaws.

SCENT SETS

In large bodies of water beavers have a habit of scouting along the shore line in certain favored spots. Artificial sets with an anchored log or line of stakes leading from the trap several feet into open water will guide the beaver to the trap. Beaver castor scent placed on a small twig stuck in the bank will draw swimming

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FIGURE 6.—Large sloughs present difficult trapping situations.

beavers to the shore. A small pile of freshly cut aspen twigs will often serve to attract beavers. Indentations in the shore line form ideal scent-set locations. The use of a boat in this situation is a necessity.

VISITING TRAP SETS

The trap sets should be visited at daybreak, early in the evening, and at midnight. If young beavers are allowed to remain in a trap more than 4 or 5 hours they may be lost through chilling. In the early evening, traps sprung by muskrats or exposed by a change in water level can be reset in time for action that night. Older beavers, if left in traps as long as 10 hours, may break loose or injure themselves in struggling for freedom.

FIGURE 7.—Taking trapped beaver ashore. (Photograph by the Forest Service.)

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FIGURE 8.—Taking beaver from Scheffer-Couch trap.

HANDLING TRAPPED BEAVERS

A captive beaver should be carried ashore in the trap (fig. 7). There the trap jaws should be opened slightly and a gunny sack slipped over the animal while it is still in the trap. Precautions against being bitten must be taken, as beavers often become enraged after being kept several hours in a trap. Patience is needed in working the animal into the gunny sack slowly and quietly so that it will not become unduly excited. The beaver may be carried over the shoulder in the gunny sack from trap to truck and thence transported to the holding pen. If lifted, the animal should be grasped by the tail and hind foot (fig. 8), as picking it up by the tail alone may paralyze it. Free use of a gunny sack is best for proper handling. If the beaver escapes onto the ground, it can be herded by switching it over the nose. When handled gently the animal can be tamed by frequently stroking its back from the rear and extending the stroking to the head only after the beaver has shown signs of overcoming its fear. Beavers can be tamed sufficiently in 2 or 3 days to feed from the hand.

HOLDING PENS

Temporary holding pens are necessary until enough beavers have been captured to warrant transporting them to permanent locations. The most satisfactory pen for use at the headquarters camp is made from 5-ply veneer panels, lined with 26-gage galvanized sheeting. It can be made collapsible, with 4- by 4-foot end panels and 4- by 8-foot sides and bottom. Fastenings should be small door hinges with removable center pins. A no. 3 washtub will hold the water required, which must be changed frequently to insure freshness. Water is essential for proper body functions unless plenty of succulent food is provided. Beavers may be held in various convenient places, such as unused rooms in a cabin or empty silos.

FOODS

The best foods for captive beavers are corn on the cob, apples, carrots, bread, and grains of various kinds. Sticks of green willows, vine maple, aspen, and cottonwoods will provide food and exercise while they are in the pens.

CLEANLINESS

Beavers are naturally clean animals and are often seen washing and combing their soft fur with the claws of the forefeet. It is essential that dry litter, such as hay, be replenished daily while they are in the holding pens. If sanitary conditions are good, beavers may be kept in the pens in a healthy condition for several months.

TRANSPORTING OPERATIONS

In cool temperatures, when the distance is short, beavers may be transported in gunny sacks on the back (fig. 9) and by truck (fig. 10). Where long distances are involved and part of the trip is by pack horse, strong wooden crates are recommended (fig. 11). A convenient double-decked crate that permits packing four beavers

to a horse has been successfully used. It measures 30 by 16 by 30 inches and has a hinged top and an end door in the lower section. Proper ventilation is provided by small windows covered with hardware cloth or hail screen. In an emergency, ordinary packing boxes or short banana crates wrapped with poultry netting may be used. Such crates can be discarded at the planting site.

B21910

FIGURE 9.—Transporting beaver by gunny sack.

When beavers are to be transported long distances by rail, the use of standard shipping crates is advised. Beavers have been expressed across the continent in electrically welded poultry crates (fig. 12). Bread shipping crates lined with galvanized sheeting, in which windows have been cut for ventilation, have been used also. These take a return empty bread-crate express rate. Open crates should be covered, as beavers are more docile in a darkened corner.

For long-distance shipping, a sack of succulent food, with feeding instructions attached, tied to the crate will eliminate the need for drinking water. A small opening at the top, covered with a slide, will facilitate feeding. Green corn on the cob is preferred, although carrots and other vegetables, apples, and a small quantity of rolled oats and bread can be fed in combination. Putting only one or two beavers in each crate or compartment, depending on the size, prevents crowding and allows for ease in handling. At the end of a rail journey the animals should be allowed to recuperate in tubs of fresh water before being reshipped by truck.

SELECTING PLANTING SITES

Watersheds should be carefully surveyed in advance of actual planting to determine the most favorable sites. Large-scale maps showing the places agreed upon will save time and facilitate orderly planting. The main requirements of a proper planting site are: (1) A suitable stream on which improvement in water storage and flood control is desired; (2) an adequate and favored food supply; (3) a year-round supply of running water; and (4) suitable places for dam building. It must be borne in mind that plantings should be avoided in short streams leading into farm lands, where trouble may later develop, near flats on which public campgrounds are located, and near roads and trails that would require expensive relocation.

FIGURE 10.—Transporting beavers by truck. (Photograph by the Forest Service.)

B31370

FIGURE 11.—Packing three beavers over forest trails.

FOOD SUPPLY

The matter of food supply is important, as it may determine whether beavers will remain permanently or will migrate to other streams in farming or other areas where they will be objectionable. Willows, mountain maples, alders, aspens, and cottonwoods are usually the trees whose green bark, twigs, and leaves furnish the best food supply. Shrubs, herbaceous plants, and grasses are valuable as supplemental foods. The bulk of the food supply should be available within 8 to 10 rods of the water, as long-distance foraging increases the danger from predators and the possibility of damage by the beavers to roads, drains, orchards, and field crops. Streamside food requirements are now being studied.

WATER SUPPLY

One reason for a beaver-stocking program is to conserve water behind a series of beaver dams. Slow release of this stored water will check floods to a certain extent and increase flow during dry seasons. Do not select streams that have small possibility of maintaining a continual flow. Tributaries having rapids, cascades, or box canyons with precipitous rock walls are not suitable spots for planting. Beavers must have banks with some soil that will grow their food supply and provide material with which to plug leaks in their dams.

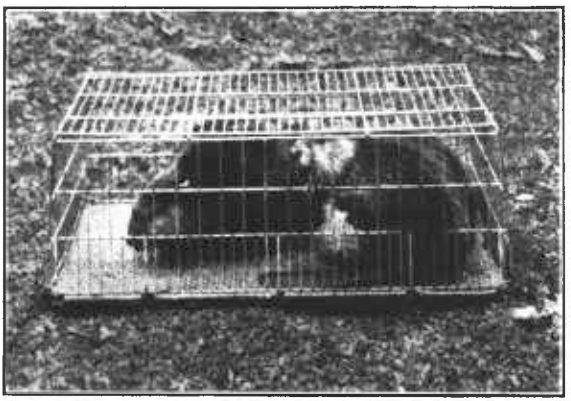

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FIGURE 12.—Type of crate for long-distance rail or truck journey in warm weather.

Nearly every mountain stream flows through some flat, marshy strips, which are practical locations. A good site is one where old beaver signs in the form of gnawed trees or remains of old dams indicate that beavers at one time naturally selected the area (fig. 13). Large mountain lakes, not more than 4,000 feet in elevation along the coastal strips and not more than 8,000 feet in the interior, furnish ideal locations for the animals, provided the food supply is ample. Small feeder streams will usually permit a natural extension of colonies for several years. For example, Packwood Lake, in the Cascade Mountains of Washington, furnished the site for nine beavers introduced by the Bureau of Biological Survey in 1924 and 1925 (fig. 14). After 10 years it was estimated that more than 300 beavers were scattered along the many tributary streams and marshes.

ARTIFICIAL PREPARATION

When beavers are planted in the summer months, little preparation of the site is required. In late fall, however, with a short time

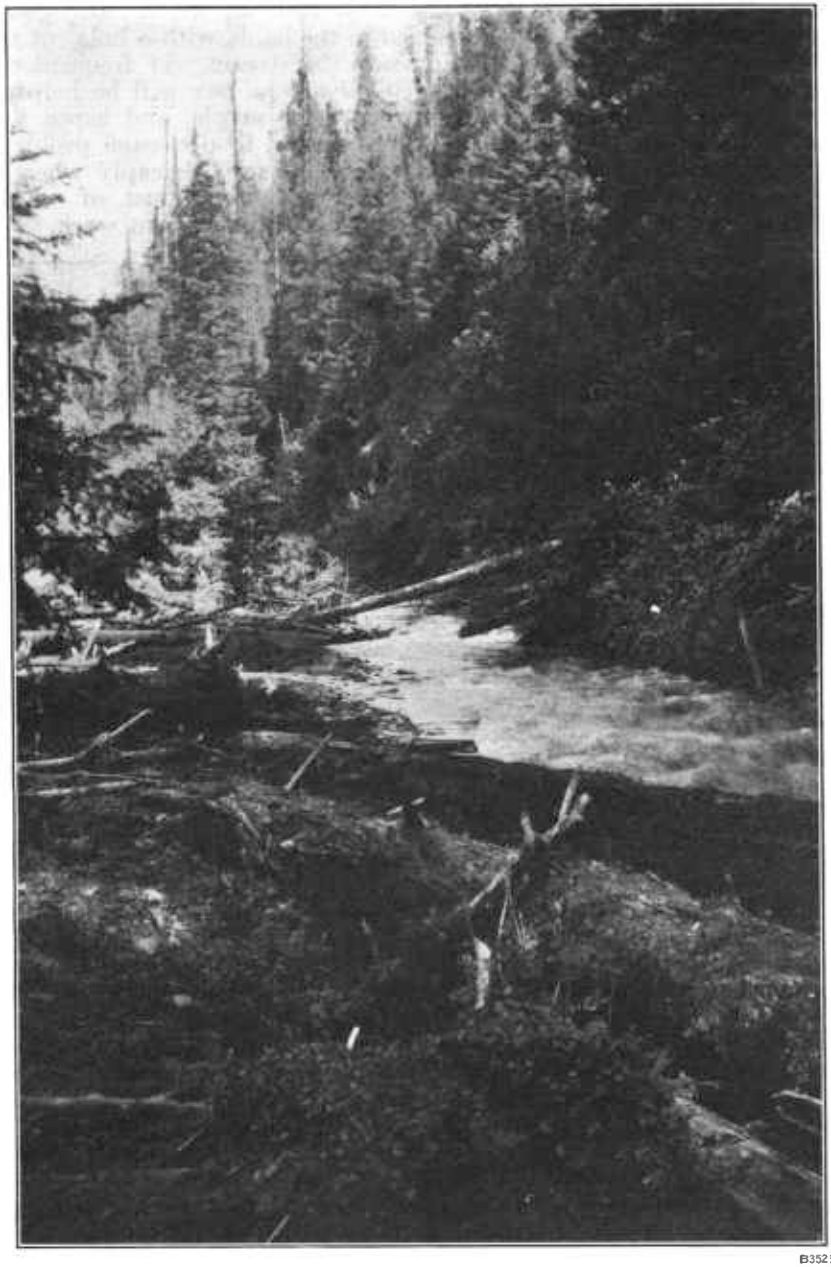

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FIGURE 13.—Suitable planting site, as shown by old beaver cuttings and available food and water supply.

left for winter preparations by the beavers, temporary dams may be constructed. Log houses, 6 feet in diameter, with an underwater entrance and covered with sod, can be built on shore. Dry-goods boxes, 4 by 4 by 3 feet may be buried in the bank, with a hole cut for connection with a burrow leading into the stream. If frequent observations are to be made, a hinged lid on the box will be helpful. Fresh piles of cut willow, cottonwood, vine maple, and aspen left along the stream will help solve the beavers' food-storage problem. Willow cuttings and other shrubs may be planted cheaply where a greater natural food supply is needed. Such work must, of course, be developed along with timber- and stream-improvement work.

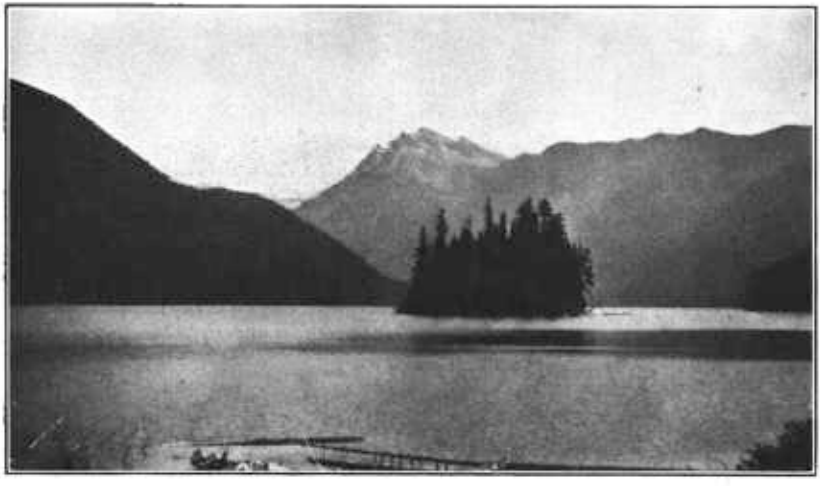

FIGURE 14.—Packwood Lake, Wash., in the Cascade Mountains, scene of beaver plantings made in 1924 and 1925 by the Bureau of Biological Survey.

PLANTING OPERATIONS

SELECTING BEAVERS

The number of beavers planted in one location should not be less than four individuals, preferably two pairs. Sex in beavers is difficult to determine without handling. Noting whether there are four mammae present or determining the presence of the male organ by feeling are the surest means of sex identification. To insure compatibility, beavers from the same colony should be planted in each location. Mixing beavers from different streams may result in losses through fighting. Compatability can be tested out in the holding pens.

Stocking with animals native to the State or district is recommended. Beavers placed in the kind of environment to which they are accustomed will do better than if planted in a strange one and the biological objection of mixing races will be overcome. In case local planting stock is not available, efforts should be made to utilize the northern dark subspecies (*Castor canadensis michiganensis*), the best beaver for maximum fur values.

MAPS AND RECORDS

As a guide to future planting operations, data showing the location of colonies planted, the number of beavers liberated, dates, and the origin of the stock should be systematically kept. Tagging the animals with tail markings or ear tattooing aids in studying their migrations and increase and serves as a check on human judgment as to acceptable locations for beavers.

CONTROL OF BEAVER POPULATION

The beaver population on watersheds must be regulated to prevent overuse of preferred trees and shrubs or possible migration (fig. 15) to less desirable forest areas or distant farm and orchard lands. When wholesale migrations occur, the purpose of the original planting is defeated.

FIGURE 15.—Looking for a new home. Beavers are active chiefly at dusk or on cloudy days. (Photograph by the Forest Service.)

Surveys of all beaver colonies made a few years apart are advisable to determine whether possible overstocking has occurred. If it has, steps can then be taken to transfer the surplus to other watersheds or to reduce the numbers by pelting after all available sites are properly stocked.

TRAPPING AND TRANSPLANTING COSTS

Very few cost data on transplanting operations are available. On the Ochoco National Forest, in Oregon, 112 beavers were trapped, with a loss of 7 animals, of which 5, taken in October, died from chilling. Trapping, holding, and transplanting costs in this case

were $688.85, an average of less than $7 per animal. The cost of taking 18 beavers in Whitman County, Wash., and transplanting them in another section of the country was $135, or $7.50 each.

Several hundred beavers transplanted in Washington were taken experimentally, and it has been estimated from those experiences that the cost of moving beavers in one operation should not be more than $10 an animal.

THE BEAVER AS AN ASSET TO RURAL SECTIONS

The beaver is a potential economic asset to the farmer and the landowner, as has been demonstrated by the income from the fur in States where conservation commissions are managing beaver production and regulating trapping, a cash sum not otherwise available. Pennsylvania, for example, had had no beavers for approximately 70 years prior to 1917 and in that year liberated a pair imported from Wisconsin. From 1917 to 1924, inclusive, 94 beavers were imported and set free in certain sections of the State at a cost of about $50 each. The animals increased so rapidly that it soon became necessary to transfer some of them to other sections. A survey by the State Board of Game Commissioners of the streams in Pennsylvania in 1931 revealed 899 beaver dams with an estimated beaver population of 4,377, which by 1934 had increased to 15,000. During the 1934 trapping season 6,455 beavers were legally taken, which, at the average price of $15 a pelt, brought the trappers a total of $96,825. In 1936, under increased trapping restrictions, 2,261 pelts were taken, which brought a total return to the trappers of $22,610, an average price of $10 each. In New York State, from which beavers had not been extirpated, trappers took 2,478 pelts during the season of 1924, for which they received $39,548, and the next year they took 3,573 and received $71,460.

These financial returns demonstrate that the beaver constitutes a natural resource of great importance to the people of Pennsylvania and New York, and the same can be said of all other States that have adopted such a restoration and conservation program. Stating it another way, the people who trapped beavers in the two States in the four years mentioned were collectively better off by at least $230,000—a winter cash income of great importance to the rural sections.

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